

## CLAIMS

1. A shaft, on an outer circumferential surface of which knurls are formed by first and second molds provided relatively movably in directions of being close to and separating from each other and to which a member to be fitted having a fit hole is fitted/fixed, comprising:

a pair of first knurls formed by a pair of first molding edges, each having a cutting face formed in parallel to a relatively moving direction and an extrusion face formed at an acute angle with respect to said cutting face and provided in said first mold so as to oppose to said cutting face and be disposed at a predetermined interval; and

a pair of second knurls formed by a pair of second molding edges, each having a cutting face formed in parallel to a relatively moving direction and an extrusion face formed at an acute angle with respect to said cutting face and provided in said second mold so as to oppose to said cutting face and be disposed at a predetermined interval,

wherein four strips of said knurls are formed so as to be evenly spaced circumferentially.

2. The shaft according to claim 1, wherein vertexes of said knurls are evenly spaced circumferentially.

3. The shaft according to claim 1, wherein the pair of said first molding edges contact at an interval of circumferentially falling within a range of 90 degrees, the pair of said second molding edges contact at an interval of circumferentially falling within a range of 90 degrees, and thereby the four strips of said knurls are formed so as to be evenly spaced circumferentially.

4. The shaft according to claim 1, wherein axial-directional lengthwise dimensions of said first and second knurls are set longer than that of said member to be fitted.

5. The shaft according to claim 1 wherein an inner diameter of said fit hole is set larger than an outer diameter of said shaft, and said member to be fitted is fitted/fixed to said first and second knurls.

6. The shaft according to claim 1, further comprising:  
a pair of third knurls circumferentially displaced by 45 degrees from said first knurls and formed by said first molding edges; and  
a pair of fourth knurls circumferentially displaced by 45 degrees from said second knurls and formed by said second molding edges,  
wherein eight strips of said knurls are formed so as to be evenly spaced circumferentially.

7. The shaft according to claim 1, wherein said member to be fitted is a commutator used for an electric motor.

8. A molding apparatus of a shaft to which a member to be fitted having a fit hole is fitted/fixed, the apparatus comprising:

first and second molds provided relatively movably through said shaft in directions of being close to and separating from each other,

a pair of first molding edges each having a cutting face formed in parallel to a relatively moving direction and an extrusion face formed at an acute angle with respect to said cutting face and provided in said first mold so as to oppose to each other and arranged in a predetermined interval; and

a pair of second molding edges each having a cutting face formed in parallel to a relatively moving direction and an extrusion face formed at an acute angle with respect to said cutting face and provided in said second mold so as to oppose to each other and arranged in a predetermined interval,

wherein a knurl is formed on an outer surface of said shaft by pressing said first and second molding edges against the outer circumferential surface of said shaft.

9. The molding apparatus of a shaft according to claim 8, wherein the pair of said first molding edges contact with the outer circumferential surface of said shaft at an interval of circumferentially falling within a range of 90 degrees, the pair of said second molding edges contact with the outer circumferential surface of said shaft at an interval of circumferentially falling within a range of 90 degrees, and thereby the four strips of said knurls are formed so as to be evenly spaced circumferentially.

10. The molding apparatus of a shaft according to claim 8, wherein said first and second molding edges are formed into parallelogram sections, which have load supporting faces formed in parallel to said extrusion faces, and

said first and second molding edges are fixed to groove portions provided in said first and second molds.